UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF
CHEMICAL SAFETY AND
POLLUTION PREVENTION

MEMORANDUM:

To: Beth Fertich

From: Eric Bohnenblust, Ph.D., Entomologist

Secondary Review: Jennifer Saunders, Ph.D., Senior Entomologist

Date: November 15, 2016

Subject: PRODUCT PERFORMANCE DATA EVALUATION RECORD (DER)

THIS DER DOES NOT CONTAIN CONFIDENTIAL BUSINESS INFORMATION

Note: MRIDs found to be **unacceptable** to support label claims should be removed from the data matrix.

DP barcode: 435411
Decision no.: 520240
Submission no: 990283
Action code: R310
Product Name: MGK Formula 3126
EPA Reg. No or File Symbol: 1021-EINT
Formulation Type: microencapsulated liquid insecticide
Ingredients statement from the label with PC codes included:

Pyriproxyfen	1.30%	PC: 129032
Lambda-cyhalothrin	4.00%	PC: 128897
Prallethrin	0.40%	PC: 128722
Piperonyl butoxide (PBO)	6.00%	PC: 067501

Application rate(s) of product and each active ingredient (lbs. or gallons/1000 square feet or per acre as appropriate; and g/m^2 or mg/cm^2 or mg/kg body weight as appropriate): 1-2 fl. oz. product/1000 ft^2;
0.39 – 0.77 g pyriproxyfen/1000 ft^2
1.18 – 2.36 g lambda-cyhalothrin/1000 ft^2
0.12 – 0.24 g prallethrin/1000 ft^2
1.78 – 3.56 g PBO/1000 ft^2
Use Patterns: broadcast, foliar, and spot applications to mosquito habitat, ornamentals and landscapes; broadcast application to lawns and turf; crack and crevice, spot, perimeter, and surface application to exterior walls, foundations and structures

I. Action Requested: Review two MRIDs to support efficacy claims against mosquitoes, flies, and ticks.

II. Background: The registrant cited two MRIDs to support efficacy claims against adult and larval mosquitoes, flies that are livestock pests (assumed to be house flies, stable flies, horn flies), and ticks for a new microencapsulated liquid product containing four active ingredients.

III. MRID Summary:

44249101. Compilation of Efficacy Studies Conducted with Pyriproxyfen.

(1) non-GLP

(2) **Methods:** This MRID is a compilation seventeen published manuscripts evaluating the effectiveness of pyriproxyfen against numerous different pest species. Studies 1 – 4, 10, and 17, evaluated efficacy against non-public health pests or pests not listed on the label and are therefore not relevant to the proposed product and not reviewed below.

Study 5, Effect and Fate of the Insect Growth Regulator Pyriproxyfen after application to the horn fly (Diptera: Muscidae): This study evaluated topical exposures of pyriproxyfen to adult female horn flies and larval development when exposed to pyriproxyfen in larval growth media. In the first set of topical tests to assess time to maximum susceptibility, a rate of 5 µg of pyriproxyfen was applied to individual flies (150 adult females total) at 1, 2, 3, or 4 days after emergence. Females were then combined with males and eggs were collected and held until they developed into pupae. Emergence of pupae was evaluated; this test was conducted twice. A second test was conducted with five pyriproxyfen concentrations ranging from 0.25 – 5 µg per adult female horn fly. The second test evaluated emergence of F_1 adult progeny. A third test assessed the development of horn fly larvae after exposure to larval diet (1 kg larval diet) treated with one of five concentrations of pyriproxyfen (0.00625 to 0.05 ppm). A fourth study evaluated exposure of adult horn flies to surface residues on glass ranging from 1 – 25 mg pyriproxyfen/700 cm^2. All studies contained a control group.

Study 6, Effects of pyriproxyfen on the reproduction of the house fly, Musca domestica, and the German cockroach, Blatella germanica: This study assessed the effects of pyriproxyfen on house flies and German cockroaches. German cockroaches are not listed on the label, therefore, this study was not reviewed to assess whether German cockroaches could be supported. Twenty-five each of house fly males and females were treated topically with 0.5 µl of an unknown dilution containing pyriproxyfen. The study used a 97.2% pyriproxyfen product diluted in acetone; however, the dilution was not given in the methods. Eggs were collected from treated females and evaluated for "hatchability." In the results section, six doses of pyriproxyfen (0.5, 1, 2, 5, 10, and 20 µg pyriproxyfen/insect) and a control are listed; however, replication of each treatment is unclear. This manuscript also describes another study to assess the effects on reproduction from exposing house fly males to surface residues of pyriproxyfen. Fifty ml of an acetone solution containing an unknown percentage of pyriproxyfen was mixed with 1 ml rapeseed oil. According to the results section, aluminum foil surfaces were treated with 100 µg/cm^2 (proposed label rate is 3.97 – 7.75 x 10^{-7} g pyriproxyfen/cm^2). After exposure, male flies were mated with untreated female flies and emergence of eggs to adults was assessed for efficacy. In the study assessing efficacy after exposure to surfaces, the paper is unclear whether exposure was limited to males, or both males and females were exposed. Also, replication appears to be one replicate of 50 flies for each treatment but replication is not adequately described in the second study.

Study 7, Laboratory evaluation of 2-[1-methyl-2-(4-phenoxyphenoxy)-ethyl]pyridine against larvae of mosquitoes and house fly: This manuscript details laboratory studies to assess the efficacy of pyriproxyfen against mosquito larvae and house flies. The data for efficacy against mosquito larvae were not reviewed because the proposed product does not have a larvacidal use pattern for mosquitoes. To test efficacy of pyriproxyfen against house fly larvae 4 days after emergence, two house fly strains were exposed to unknown concentrations of pyriproxyfen in artificial or chicken manure growth medium. Insecticidal activity was expressed as the inhibition concentration to reach a 50 or 90% effect (IC_{50} or IC_{90}). The measured effect was inhibition of adult emergence from eggs or an unknown larval growth stage.

Study 8, Evaluation of larvicidal potency of insect growth regulator, 2-[1-methyl-2-(4-phenoxyphenoxy)ethoxy]pyridine, against the house fly, Musca domestica: This is a published manuscript which outlines several laboratory studies and a semi-field evaluation of the efficacy of pyriproxyfen against house flies. One study evaluated topical application of 0.5 µl of an unknown dilution of pyriproxyfen on four-day old house fly larvae. This study was conducted with 20 larvae per treatment, and larval emergence was assessed at two weeks post treatment and presented as the inhibition dose or lethal dose for a 90% effect (ID_{90} or LD_{90}). The second study used the dipping method. The study using the dipping method was not evaluated because it does not adequately simulate use conditions and is not an acceptable method for supporting efficacy claims. A third study placed 50 eggs in artificial medium with 10 ml of an unknown solution containing pyriproxyfen. Activity in the study with

artificial medium was presented as the ID_{90} or LD_{90}. In the semi-field evaluation, three formulations of pyriproxyfen were tested, a 5% solubilized emulsifiable concentrate, a 5% wettable powder, and a 0.5% granular form. Ten kg of swine manure was then placed into a plastic container and inoculated with 1100 house fly eggs. The plastic containers were placed in a hen house for 7 weeks for testing. The tested products were applied to the manure at a rate of 2000 ml/m^2 (5% EC - 100 and 200 mg pyriproxyfen/m^2; 0.5% granular and 5% wettable powder – 100 mg pyriproxyfen/m^2 equivalent to 9.29 g pyriproxyfen/1000 ft^2). Adult emergence was assessed throughout the study.

Study 9, Interactions of the insect growth regulator pyriproxyfen with immature and adult stages of the stable fly: This manuscript assessed the efficacy of pyriproxyfen as an insect growth regulator against stable flies. In the first test, an unknown number of eggs were immersed for 30 minutes in aqueous solutions of pyriproxyfen ranging from 0.1 to 0.54 ppm. Eggs were then washed and assessed for hatching. A second test evaluated efficacy of pyriproxyfen against stable fly larvae using the dip method, the dip method is not an acceptable method for testing efficacy of the proposed product. A third study evaluated adult emergence of eggs inoculated in larval diet medium containing pyriproxyfen concentrations of 1.25, 2.5, and 5 ppb. In this third study, each treatment including the control was replicated at least 4 times with an unknown number of individual eggs. A fourth study assessed continuous exposure of stable fly adults for the first 6 to 7 days after emergence to residues of pyriproxyfen (5.7, 11.4, and 34.2 µg pyriproxyfen/cm^2). Pyriproxyfen was dissolved in an acetone and 5% canola oil solution for application to a glass globe. One thousand pupae were exposed to each treated globe. At 7 days post emergence, eggs were collected from each group of flies and assessed for pupal and adult emergence.

Study 11, Evaluation of juvenile hormone analogue JHM/s-31183 against immature stages of mosquitoes in natural habitats: This study evaluated efficacy of pyriproxyfen against mosquito larvae. Because there are no uses for the proposed product as a mosquito larvacide, this study was not reviewed.

Study 12, Laboratory evaluation of insect growth regulators against several species of anopheline mosquitoes: This study evaluated efficacy of pyriproxyfen against mosquito larvae. Because there are no uses for the proposed product as a mosquito larvacide, this study was not reviewed.

Study 13, Utilization of bloodfed females of the Aedes aegypti as a vehicle for the transfer of the insect growth regulator pyriproxyfen to larval habitats: This study evaluated the ability of female mosquitoes to land on a pyriproxyfen treated surface, pick up pyriproxyfen and transfer the pesticide to larval habitats. This study was only reviewed to determine that it did not test the proposed product. While this study may show proof of concept for the transfer behavior to occur, the proposed product contains several pyrethroids and a synergist for the pyrethroid active ingredients suggesting quick adulticide activity and therefore this study cannot support efficacy claims for the proposed product. Data showing transfer of pyriproxyfen to larval habitats for this product must be conducted with the proposed product to determine that the adulticide portion does not kill the adult mosquitos before they can transfer the pyriproxyfen to the larval habitat.

Study 14, Efficacy of a juvenile hormone mimic, pyriproxyfen (s-31183), for mosquito control in dairy wastewater lagoons: This study evaluated efficacy of pyriproxyfen against mosquito larvae. Because there are no uses for the proposed product as a mosquito larvacide, this study was not reviewed.

Study 15, Efficacy, nontarget effects, and chemical persistence of s-31183, a promising mosquito (Diptera: Culicidae) control agent: This study evaluated efficacy of pyriproxyfen against mosquito larvae. Because there are no uses for the proposed product as a mosquito larvacide, this study was not reviewed.

Study 16, Potential for resistance to pyriproxyfen: A promising new mosquito larvicide: This study evaluated efficacy of pyriproxyfen against mosquito larvae. Because there are no uses for the proposed product as a mosquito larvacide, this study was not reviewed.

Study 18, Effects of pyriproxyfen on engorged females and newly oviposited eggs of the lone star tick (Acari: Ixodidae): Engorged female lone star ticks were exposed in glass vials to three different treatments of pyriproxyfen (4, 8, 16 µg/cm^2) for exposure periods of 7 days, 14 days, and continuous exposure and then assessed for fecundity. The number of individual females assessed for fecundity was not provided. Eggs of the lone star tick (aged 1 or 3 days) were exposed to six rates of pyriproxyfen (0.02, 0.2, 22, 4, 8, 16 µg/cm^2) and observed for emergence into

larvae. There were 20 replicates of 250-300 eggs which were exposed to the treatments. Lone star tick larvae were exposed to either 0.2 or 2.0 µg pyriproxyfen/cm^2 continuously, for 7 days, or for 14 days and then observed for a nymphal molt. A control treatment was included in all studies.

(3) **Results:**

Study 5: The reduction in adult emergence in all of the studies described in this manuscript never reached 90% at any of the rates tested. Also, because it is unclear how the tested rates translate to the labeled rate, and the proposed use patterns for this pest would be different from the testing parameters, this study does not support efficacy claims against horn flies for the proposed product.

Study 6: In the study assessing the effects of topical application to adult house flies, the doses of 10 and 20 µg pyriproxyfen/insect inhibited emergence of adults from the F_1 progeny by over 90%; however, the lower doses did not reduce adult emergence by 90%. The inhibition of eggs emerging into adults when adult house flies were exposed to treated surfaces reached 90% between 2-3 weeks after eggs were inoculated into growth media. The topical application and residual exposure rates are higher than the proposed label rate. Further, replication does not appear to be adequate or clearly articulated, and the laboratory testing conducted in this study does not adequately simulate the use conditions on the proposed label. This study does not support efficacy claims against house flies for the proposed product.

Study 7: The IC_{90} for pyriproxyfen on larvae was 0.0030 µg pyriproxyfen/g medium and for eggs was 0.012 µg pyriproxyfen/g medium in the chicken manure medium. On artificial growth medium, the IC_{90} was 0.027 and 0.0091 µg pyriproxyfen/g medium. Methods in this study are not adequate for proper evaluation, replication was not provided, and the tested rate cannot be compared to the labeled rate, therefore, this study does not support any efficacy claims for the proposed product.

Study 8: In the first topical application study, the ID_{90} for pyriproxyfen was 0.00257 µg/larvae, however replication was inadequate and the study did not test the proposed formulation. In the third study evaluating survival on artificial medium, the IC_{90} was 0.0087 µg/g medium for eggs, 0.012 µg/g medium for 2-day-old larvae, and 0.0053 µg/g medium for 4-day-old larvae. In the semi-field study, over 90% inhibition of adult emergence was observed for all pyriproxyfen treatments when compared to the control treatment. The replication in all groups in all studies is not adequate or clearly explained, and the effective doses in the topical assays do not directly translate to the label rate on a per area basis. In the semi-field study, each treatment appears to only be replicated one time and the tested rate is higher than the labeled rate. This study does not support efficacy claims against house flies for the proposed product.

Study 9: In the first study where eggs were immersed, pyriproxyfen treatments did not reduce egg hatch or subsequent development when compared to the control. In the third study, the lethal concentration to kill 50% of the test population (LC_{50}) was 2.6 ppb. In the fourth study, the highest tested level of pyriproxyfen (34.2 µg pyriproxyfen/cm^2) only reduced the percent adult emergence 20% when compared to the control and flies were continuously exposed. The data provided in this study do not show the necessary 90% reduction in egg hatch or adult emergence and adult flies should not be subjected to continuous forced exposure. The Agency does not regulate on LC_{50} values; therefore, this study does not support efficacy claims for the proposed product.

Study 18: Exposure of adult female lone star ticks to all tested rates resulted in eggs that would not hatch (greater than 90% inhibition of egg hatch), although over 90% of the treated females laid eggs. In the control treatment 89% of eggs hatched. However, when eggs were exposed to pyriproxyfen, only continuous exposure to 16 µg pyripoxyfen/cm^2 treatment reduced the emergence of live larvae by 90%, all other treatments and exposure periods resulted in an 87% or lower reduction in the emergence of live larvae. In the 0.2 and 2.0 ug pyripoxyfen/cm^2 treatments, over 90% of larvae exposed in the egg stage molted into nymphs at 7 days post larval emergence. The other higher rates were not assessed for nymph emergence. This manuscript did not describe the replication for exposing adult females, and efficacy in the other studies was typically far less than 90%. Therefore, this study does not support efficacy against lone star ticks for the proposed product.

(4) **Conclusion: Unacceptable**. The studies contained in this MRID do not support efficacy claims for the proposed

product.

49977310. Laboratory Evaluation of Direct Liquid Spray Insecticides MGK Formula 3118, Demand CS and Combinations of Demand CS and Archer Against Cat Fleas, Mosquitoes, and Ticks – Initial Knockdown and Post-knockdown Mortality.

(1) non-GLP

(2) **Methods:** This study tested the efficacy against pyrethroid-susceptible (PY-S) mosquitoes (*Culex quinquefaciatus, Anopheles quadrimaculatus,* and *Aedes aegypti*) and pyrethroid-resistant (PY-R) mosquitoes (*Culex quinquefaciatus, Anopheles hemsi,* and *Ae. aegypti*), fleas, and ticks (deer ticks, American dog tick, and brown dog tick) of a combination product (registrant confirmed that combination product contained microencapsulated lambda-cyhalothrin) at three rates containing 0.966% prallethrin (ETOC), 3.18% nylar (pyriproxyfen), 9.77% lambda-cyhalothrin microencapsulated, and 14.66% piperonyl butoxide (PBO), a 9.77% lambda-cyhaolthrin microencapsulated product (EPA Reg. No. 100-1066) alone and in two combinations with a 1.3% pyriproxyfen product, and an untreated control treatment (Table 1 below). There were four replicates of 10 individuals of each species for each treatment dose tested. Subjects were held in 5.5-oz. straight-side plastic cups with lids (approx. area: 0.192 ft^2). Prior to application, test subjects were immobilized and then sprayed with product. Application rates were below the proposed application rate for the labeled product. Individuals of all species were evaluated for knockdown at 60 minutes post application and mortality at 24, 48, and 96 h post application.

Table 1: Tested rates for insecticidal treatments for each pest. Note that 3.6 µg lambda-cyhalothrin is equivalent to 0.0188 g lambda-cyahlothrin/1000 ft^2; 0.36 µg ETOC (prallethrin) is equivalent to 0.00188 g prallethrin/1000 ft^2; 1.19 µg pyriproxyfen is equivalent to 0.0062 g pyriproxyfen/1000 ft^2 ; 5.4 µg PBO is equivalent to 0.028 g PBO/1000 ft^2.

Products and AIs	Concentrations applied	Quantities applied*	Targets
MGK Formula 3118 Revision 2 (0.966% ETOC, 3.18% Nylar, 9.77%, λ-Cyhalothrin, 14.66% PBO)	ETOC (0.00015%) + Nylar (0.00050%) + λ-Cyhalothrin (0.00155%) + PBO (0.00233%)	ETOC 0.18 µg + Nylar 0.60 µg + λ-cyhalothrin 1.86 µg + PBO 2.80 µg	*Ctenocephalides felis*, *Ixodes scapularis*, *Dermacentor variables*, *Rhipicephalus sanguineus*, *Aedes aegypti* (PY-S & PY-R), *Cx. quinquefasciatus* (PY-S & PR-R), *Anopheles quadrimaculatus* (PY-S & PY-R)
	ETOC (0.00023% + Nylar (0.00075%) + λ-Cyhalothrin (0.00230%) + PBO (0.00345%)	ETOC 0.28 µg + Nylar 0.90 µg + λ-cyhalothrin 2.76 µg + PBO 4.14 µg	
	ETOC (0.00030% + Nylar (0.00099%) + λ-Cyhalothrin (0.00305%) + PBO (0.00458%)	ETOC 0.36 µg + Nylar 1.19 µg + λ-cyhalothrin 3.66 µg + PBO 5.40 µg	
Demand CS (9.77% λ-cyhalothrin)	λ-cyhalothrin (0.0015%)	λ-cyhalothrin 1.80 µg	*Aedes aegypti* (PY-S), *Cx. quinquefasciatus* (PY-S), *Anopheles quadrimaculatus* (PY-S)
	λ-cyhalothrin (0.0030%)	λ-cyhalothrin 3.60 µg	
Demand + Archer (0.4 : 1.0) (2.77% λ-Cyhalothrin + 0.93% pyriproxyfen)	λ-cyhalothrin (0.0015%) + Pyriproxyfen (0.0005%)	λ-cyhalothrin 1.80 µg + Pyriproxyfen 0.60 µg	
Demand + Archer (0.8 : 1.0) (4.31% λ-Cyhalothrin + 0.72% pyriproxyfen)	λ-cyhalothrin (0.0030%) + Pyriproxyfen (0.0005%)	λ-cyhalothrin 3.60 µg + Pyriproxyfen 0.60 µg	

* 120 µl applied per treatment.

(3) **Results:** Control mortality was less than 10% for all tested insect species/strains at all time points tested for all treatments. For the combination product at all three tested rates, knockdown at 60 minutes post application was over 90% for PY-S *Ae. aegypti*, *Culex quinquefasciatus*, and *An. quadrimaculatus,* the southern California strain of PY-R *Ae. aegypti*, PY-R *An. hemsi*, and the deer tick. Knockdown of PY-R *Ae. aegypti* (Puerto Rico strain), *Culex quinquefasciatus,* was less than 90% for all three tested rates for the combination product. For combination product, knockdown of both dog tick species at 60 minutes post application was less than 90% for the lowest tested rate, but for the two highest tested rates knockdown was 100%. The lambda-cyhalothrin product alone at both tested rates knocked down 30% or fewer of all three PY-S mosquitoes tested at 60-min post application (the lambda-cyhalothrin and lambda-cyhalothrin mixed with pyriproxyfen treatments were only tested against PY-S mosquitoes). The highest tested rate of lambda-cyhalothrin mixed with pyriproxyfen knocked down 90% of Anopheles quadrimaculatus mosquitoes. Knockdown of the other PY-S mosquito species was 86.7% or less for both rates of lambda-cyhalothrin mixed with pyriproxyfen.

Through 96 h post treatment, the two lowest rates of the combination product killed over 90% of PY-S *Ae. aegypti*, PY-S *An. quadrimaculatus*, PY-R *An. hemsi*, and deer ticks. The highest tested rate of the combination product killed over 90% of PY-S *Ae. aegypti*, PY-S *An. quadrimaculatus*, PY-S *Culex quinquefasciatus*, PY-R *An. hemsi*, deer ticks, and brown dog ticks. Efficacy of the combination product did not reach 90% at any treatment rate through 96 hours post treatment against American dog ticks or PY-R *Ae. aegypti* or *Culex quinquefasciatus* mosquito strains. The product containing only lambda-cyhalothrin did not achieve 90% efficacy against any of the

three PY-S susceptible mosquito species. When the lambda-cyhalothrin and pyriproxyfen products were tested in combination, the lowest rate tested did not kill 90% of any of the three PY-S susceptible mosquito species. The higher rate of lambda-cyhalothrin and pyriproxyfen killed over 90% of PY-S *Ae. aegypti* and *An. quadrimaculatus* but efficacy against the other two PY-S *Culex quinquefasciatus* was 27%.

(4) **Conclusion: Partially Acceptable.** This study supports claims of kills mosquitoes when directly contacted by the pesticide. This study shows efficacy of a direct spray against deer ticks and brown dog ticks, but does not support efficacy claims against ticks because the Agency requires data to support efficacy against the lone star tick in addition to the two ticks noted above. This study does not show efficacy against American dog ticks. This study evaluated efficacy against fleas, however, because there were no efficacy claims against fleas on the label the study was not assessed to determine if efficacy claims against fleas are supported by the data.

IV. EXECUTIVE DATA SUMMARY:

(A) The data reviewed above support claims of kills mosquitoes and knockdown of mosquitoes within 1 hour. For fast acting/fast knockdown claims, the Agency requires 90% or greater knockdown within 30 seconds of contact/application with 90% mortality confirmed by 96 hours post contact/application.

The data do not support efficacy claims against horn flies, house flies, or stable flies, or the larvae of these fly species. They also do not support efficacy claims against ticks, because data are required showing efficacy of the product against the Lone Star tick in addition to the data above showing efficacy against brown dog tick and deer ticks. Data were not submitted for centipedes, therefore, claims against centipedes are not supported.

V. LABEL RECOMMENDATIONS:

(1) Please make the following changes to the directions for use:

On page 4 under “Pests Controlled”: Delete house centipedes, brown dog ticks, and deer ticks

On page 5 under “Foam Applications”: This needs to specify “listed pests” or list the specific pests for which this treatment is intended.

On page 5 under the specific use directions for “Mosquitoes”: Please modify the first sentence to say “Apply as a spray where mosquitoes may rest, harbor, or breed, contacting as many mosquitoes as possible.”

On page 5/6 in the Outdoor and Indoor Use tables: Delete brown dog ticks and deer ticks from all sections

On page 5/6: Delete the specific use directions for ticks.

On page 6: Modify the heading for the section “Flies” to “Listed Flies”

On page 6/7 in the table for livestock and poultry housing and the headings for “specific use directions”: Change the pests to “listed crawling insects” and “listed flying insects”

(2) The following marketing claims are acceptable:
[Provides] [knockdown within 1 hour] [and] kill of labeled pests
[Provides] [knockdown within 1 hour] [and] kill of labeled insects
[Provides] [knockdown within 1 hour] [and] kill of mosquitoes
[Provides] [knockdown within 1 hour] [and] kill of listed flying insects
[knockdown within 1 hour] [and] kill of mosquitoes
[knockdown] [and] kill of crane flies, drain flies, fruit flies and phorid flies
[knockdown within 1 hour] [and] kill of listed flying insects [and other labeled pests]
Kills mosquitoes
Kills crane flies, drain flies, fruit flies and phorid flies

Kills mosquitoes and other listed flying insects
Kills listed flying insects
Kills mosquitoes, listed flying insects and other labeled [pests][insects]
Fast-acting against crane flies, drain flies, fruit flies and phorid flies
[Provides] rapid kill of crane flies, drain flies, fruit flies and phorid flies
Provides control of crane flies, drain flies, fruit flies and phorid Flies
Kills mosquitoes including those that may transmit [West Nile virus] [and] [Chikungunya virus] [and] [Zika virus]
Contains Exponent® [brand synergist]
Synergized with Exponent®
Synergized with Piperonyl Butoxide [(PBO)]
Contains NyGuard® IGR
Dual modes of action
Two modes of action
Kills spiders* *except black widow and brown recluse spiders
Kills through contact
Convenient [combo] [all-in-one] product
Remains stable in solution
Kills listed [insects] [and] [flies] in and around [livestock] [and] [poultry] [facilities] [and] [horse barns]
Kills listed flies and mosquitoes in and around livestock and poultry facilities
Kills listed flies and mosquitoes around deer pens
Controls adult and larvae darkling beetles
Kills adult and larvae darkling beetles
Kills [Aedes] [and] [Anopholes] [and] [Culex] mosquitoes
Kills Aedes mosquitoes
Kills Anopholes mosquitoes
Kills Culex mosquitoes
Kills Aedes aegypti mosquitoes

(3) The following marketing claims are unacceptable:
[Provides] broad spectrum control
Fast-acting against mosquitoes
Fast-acting against flying insects
Fast-acting against mosquitoes, flying insects and other labeled [pests] [insects]
Fast-acting against labeled [pests] [insects]
Aids in reducing annoyance from mosquitoes
Aids in reducing annoyance from crane flies, drain flies, fruit flies and phorid flies
Aids in reducing annoyance from flying insects
Aids in reducing annoyance from mosquitoes, flying insects and other labeled [pests] [insects]
Aids in reducing annoyance from labeled [pests] [insects]
[Provides] rapid kill of mosquitoes
[Provides] rapid kill of flying insects
[Provides] rapid kill of mosquitoes, flying insects and other labeled [pests] [insects]
[Provides] rapid kill of labeled [pests] [insects]
Provides control of mosquitoes
Provides control of flying insects
Provides control of mosquitoes, flying insects and other labeled [pests] [insects]
Provides control of labeled [pests] [insects]
Synergized formula for effective control and kill
Synergized formula for enhanced control and kill
[Synergized] mosquito control concentrate
[NyGuard IGR] Prevents adult mosquito emergence of the Aedes mosquitoes

[NyGuard IGR] Prevents Aedes mosquito larvae from becoming[breeding] [biting] adults
[NyGuard IGR] Prevents adult mosquito emergence
[NyGuard IGR] Prevents mosquito larvae from becoming [breeding] [biting] adults
Fast-acting microencapsulated formula
Kills deer ticks
Kills deer ticks and other Ixodid species [including those that may transmit Lyme disease]
Kills spiders
Kills quickly
For control of nuisance [insects] [and] [flies] in and around [livestock] [and] [poultry] [facilities] [and] horse barns]
Controls flies and mosquitoes in and around livestock and poultry facilities
Controls flies and mosquitoes around deer pens
Multi-purpose insect killer
[Targeted applications] create a barrier around the [home] [and] [yard]
Helps combat metabolic resistance
Kills Aedes albopictus mosquitoes

(4) The following MRIDs should be removed from the data matrix, as they are classified as "unacceptable" to support the product: 44249101

(5) Note to PM/Reviewer: Void treatments are only listed under foam application; the label contains no instructions/rates for applying void treatments.